

(12) UK Patent Application (19) GB (11) 2 137 898 A

(43) Application published 17 Oct 1984

(21) Application No 8310164

(22) Date of filing 14 Apr 1983

(71) Applicant
Samuel Manley Brodie,
14 Osborne Road, St. Annes-on-Sea, Lancashire

(72) Inventor
Samuel Manley Brodie

(74) Agent and/or Address for Service
Mewburn Ellis & Co., 2/3 Cursitor Street, London
EC4A 1BQ

(51) INT CL³
A47J 27/08 31/54

(52) Domestic classification
B1X 30X11 32 35C2
U1S 1739 1977 2400 B1X

(56) Documents cited
GB 0626850
'The Cooks' Catalogue' Ed. J. Beard, M. Glaser et, al Pub.
Harper & Row N. Y. (1975) (NRLS1 classf. (B) HQ OS) — See
p. 505 with reference to the 'Espresso' coffee machines
described in the LH & RH columns and p. 506 with reference
to the machines described in the LH column.

(58) Field of search
B1X

(54) Pressure cookers and pressure vessels

(57) A pressure vessel from which steam can be generated has a steam outlet 4 at an upper region 3 of the vessel, a valve 6 in communication with the steam outlet 4 and a discharge pipe 8 communicating with the valve 6 and extending downwardly from the upper region 3 of the vessel. The discharge pipe 8 is capable of insertion into a container placed around the pipe 8 such that steam from the pipe is discharged into contents within the container.

The pressure vessel may for example be a domestic pressure cooker 10 modified by the addition of the abovementioned valve and discharge pipe. The valve may be controlled by, for example, a lever 7 or rotatable knob so as to either maintain pressure within the vessel 10 or allow steam to escape through the discharge pipe 8 and into the contents of the container. It can thus be used as, for example, a coffee maker.

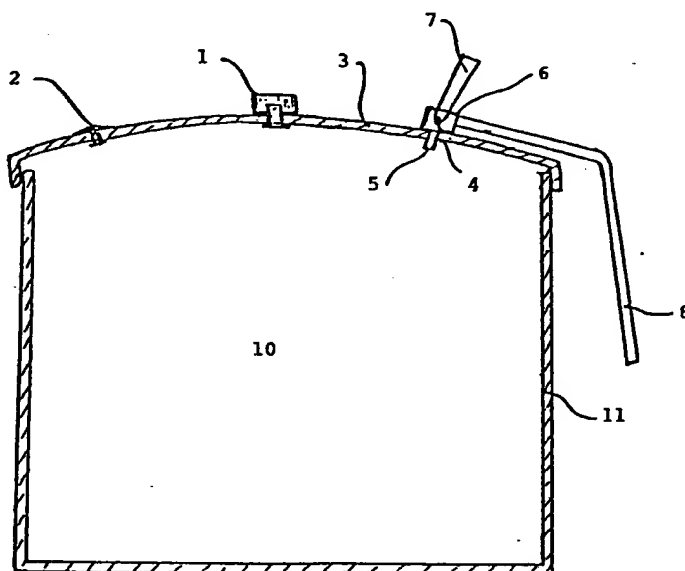


FIG. 1.

BEST AVAILABLE COPY

GB 2 137 898 A

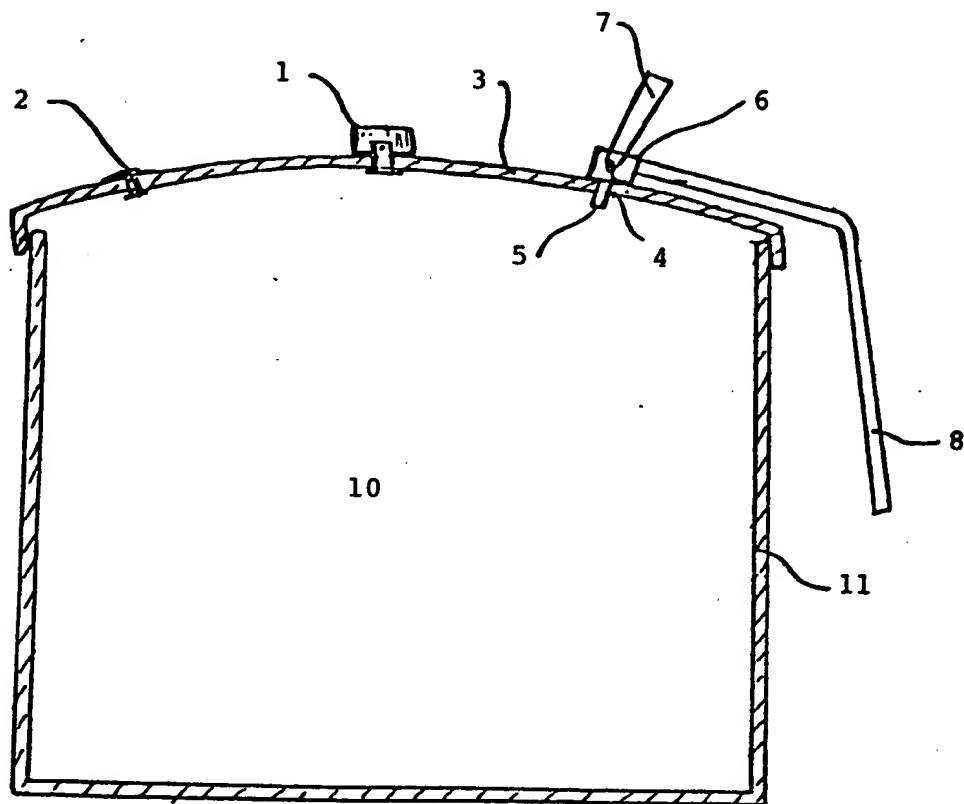


FIG. 1.

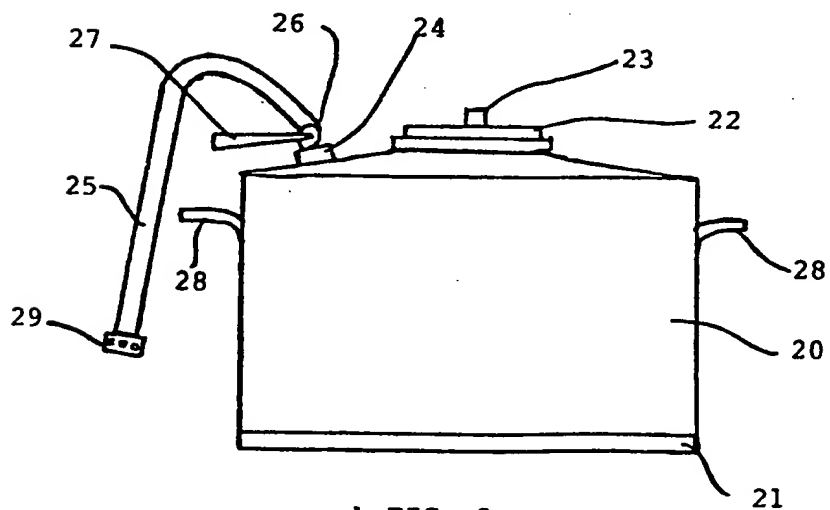
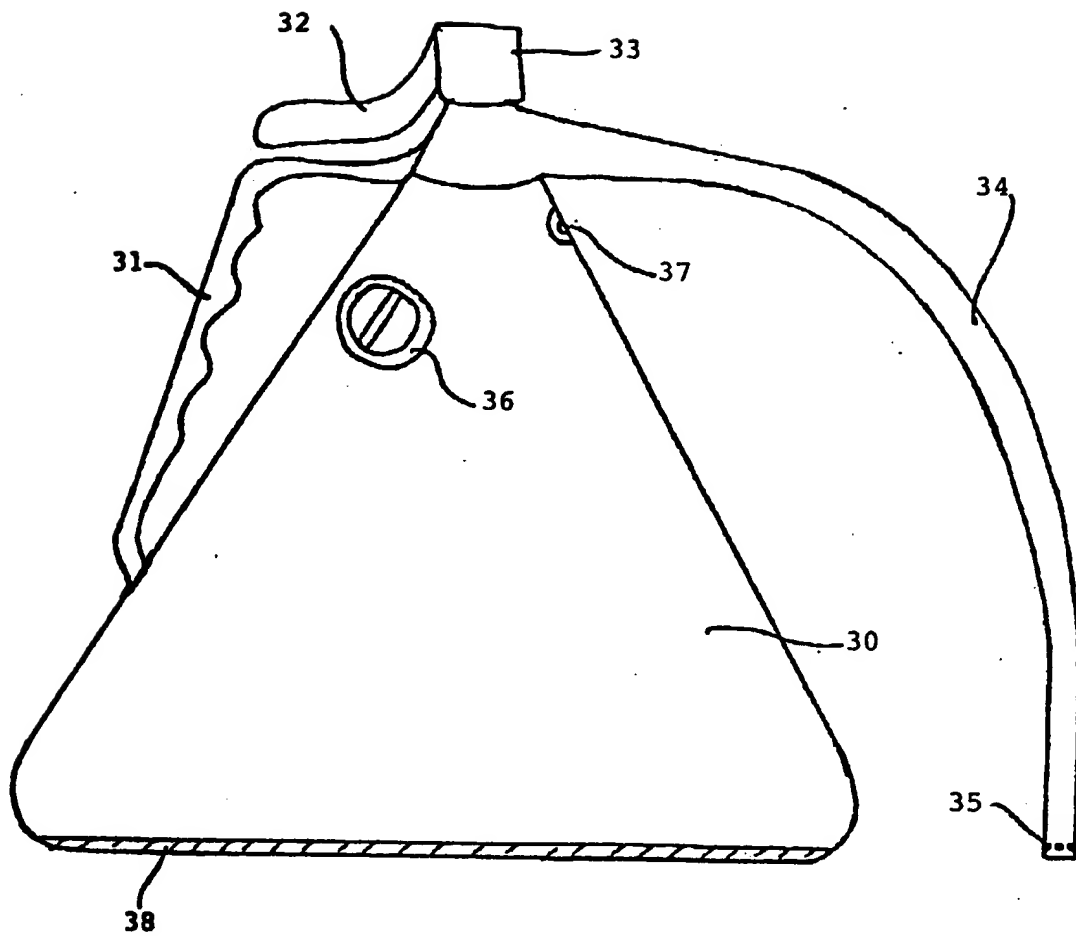


FIG. 2.

2/3

FIG. 3.

3/3

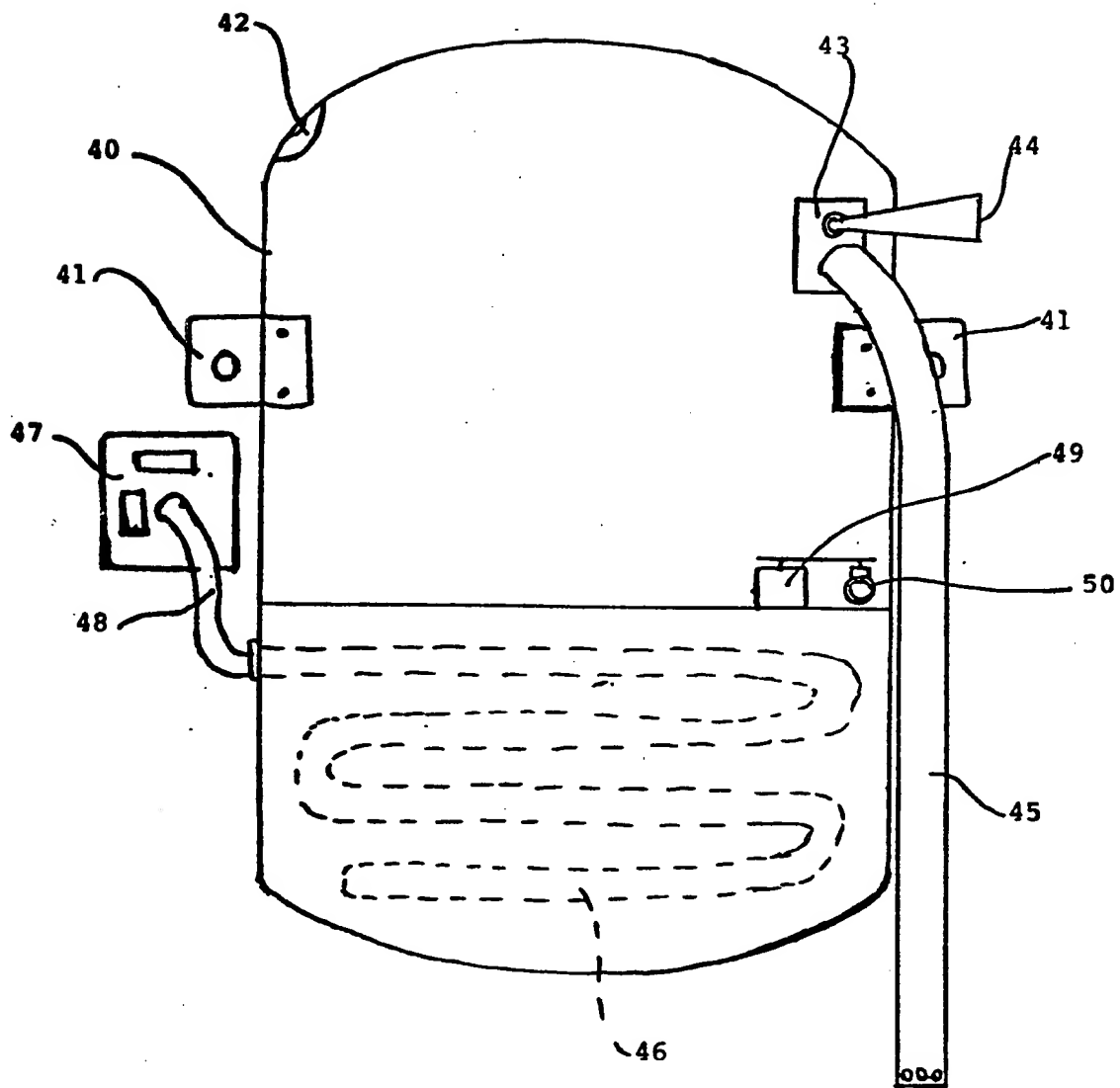


FIG. 4.

SPECIFICATION

Pressure Cookers and Pressure Vessels

This invention relates to pressure cookers, and is concerned particularly with domestic pressure cookers.

According to a first aspect of the present invention, there is provided a domestic pressure cooker provided with a steam outlet at or adjacent the top of the cooker, a valve in communication with said outlet, and a discharge pipe communicating with said valve and extending downwardly adjacent the side of the cooker, the arrangement being such that steam may be discharged through said pipe under the control of said valve, with a container placed around said pipe such that the steam therefrom is discharged into the contents of the container.

Thus, such a cooker may, in addition to providing the normal cooking facility of a domestic pressure cooker, provide a controllable release of steam under pressure, for the heating and cooking of foods in a container which is placed around the discharge pipe.

Preferably, that length of said pipe which extends downwardly adjacent the side of the cooker is at least 10 cm. The said length is preferably between 10 cm. and 20 cm., and may advantageously be substantially 15 cm.

The valve may comprise any suitable valve means which may be controlled by a user of the cooker. The valve may comprise an operating lever, or may comprise a rotatable knob, by which it may be operated.

Preferably, said valve and/or said outlet may be provided in a lid of the cooker.

The steam outlet may be provided in a wall or lid of the cooker, and communicate substantially directly with the interior of the cooker. By this it is meant that the outlet does not communicate with the interior of the cooker by way of a pipe or the like which projects a substantial distance within the cooker.

The pressure cooker may have a safety valve for the relief of excess pressure. The pressure cooker may have a control and/or indicator for controlling and/or indicating the pressure within the cooker.

According to a second aspect of the present invention, there is provided a method of modifying a domestic pressure cooker, comprising the steps of providing the cooker with a steam outlet, valve and discharge pipe to provide a cooker in accordance with the first aspect of the invention.

For a better understanding of the invention and to show how the same may be carried into effect, reference will now be made, by way of example, to the accompanying diagrammatic drawings, Figure 1 of which illustrates in section a pressure cooker in accordance with the invention.

The illustrated pressure cooker 10 comprises a base portion 11 which is provided with a lid 3. A suitable seal (not shown) is provided between the lid 3 and the base 11. The lid 3 is provided

with a safety valve 2, for the relief of excess pressure, and a control 1 for controlling the pressure within the cooker 10. For example, the control 1 may comprise a weighted member which is seated on a vent in the lid 3, such as to close the vent until a predetermined pressure has been reached.

Thus far, the pressure cooker 10 is of conventional design.

However, the pressure cooker 10 differs from conventional cookers in that a further hole 4 is formed in the lid 3, and through it passes a short inlet pipe 5, which does not project for any significant distance into the interior of the cooker 10, and thereby communicates substantially directly with the interior. The pipe 5 leads to a control valve 6, which is provided with a control lever 7. Leading from the control valve 6, a steam discharge pipe 8 extends firstly adjacent the lid 3, and then downwardly, adjacent the side of the cooker 10. The length of that portion of the discharge pipe 8 which extends adjacent the side of the cooker 10 is substantially 15 cm.

It is to be appreciated that a suitable seal is provided between the pipe 5 and the hole 4, and that, if desired, the pipe 5 may be dispensed with, and the hole 4 communicate directly with the valve 6, suitable sealing means being provided to ensure that steam passing through the hole 4 can not escape other than *via* the valve 6 and discharge pipe 8. It may be advantageous to provide a removable filter in or around the pipe 5 or hole 4, to prevent the ingress of foreign matter into the valve 6.

The cooker 10 may be used for the pressure cooking of foods, in a conventional manner. However, when desired, the cooker 10 may be filled with a suitable quantity of water, which is then caused to boil to create steam under pressure within the cooker 10. Upon operating the control lever 7, the pressurized steam is released in a controlled manner through the discharge pipe 8. A container containing food or drink to be heated or cooked is placed around the discharge pipe 8, such that the pressurized steam discharged therefrom is caused to pass through the food or drink. For example, the pressurized steam may be used to make espresso coffee—a drink which has enjoyed great popularity, but which it has been almost impossible to make domestically, without the assistance of an expensive commercial machine.

It will be appreciated that the illustrated pressure cooker 10 may be used to heat a wide range of foods and drinks by means of pressurized steam dispensed through the discharge pipe 8. A particularly important feature is that the facility for providing pressurized steam may be provided at a very low cost, particularly as compared to commercial machines which are designed to provide steam under pressure, and which tend to be extremely expensive, by domestic standards. An existing conventional pressure cooker may be very simply and cheaply converted simply by drilling a hole of suitable dimensions in the lid,

mounting in and on the lid the pipe 5 and valve 6, to which the discharge pipe 8 is connected, with the provision of suitable sealing means where necessary. The pipe 5/valve 6/pipe 8 assembly may be made readily removable from the lid 3, as desired, to facilitate cleaning, servicing or replacement, and if it is ever desired to re-convert the cooker 10 back to a conventional pressure cooker, then the hole 4 may be simply blocked off by a suitable means (e.g. a suitable assembly of nut, bolt and washers)—or indeed, the hole 4 may simply be made of such a dimension as to accept a standard safety valve such as the safety valve 2.

In another aspect, the invention provides a pressure vessel having a base adapted to receive heat from a cooker, a steam outlet at or adjacent the top of the cooker, a valve in connection with said outlet, and a discharge pipe communicating with said valve and extending downwardly adjacent the side of the cooker, the arrangement being such that steam may be discharged through said pipe under the control of said valve, with a container placed around said pipe such that the steam therefrom is discharged into the contents of the container.

In a further aspect the invention provides a pressure vessel having an integral heating element, a steam outlet at or adjacent the top of the cooker, a valve in communication with said outlet, and a discharge pipe communicating with said valve and extending downwardly adjacent the side of the cooker, the arrangement being such that steam may be discharged through said pipe under the control of said valve, with a container placed around said pipe such that the steam therefrom is discharged into the contents of the container.

Preferably, the heating element is an electric element, and the vessel is adapted to receive only a small amount of water—for example, less than two litres and, preferably, of the order of half a litre or less. The vessel may then be of relatively small dimensions, and may be wall mounted.

Further embodiments of the invention will now be described, by way of example, with reference to Figures 2 to 4 of the accompanying drawings, which show different respective pressure vessels.

In Figure 2, a pressure vessel 20 is made of metal, and has a heavy machined base 21 which is adapted to be placed on a domestic cooker, whereby the pressure vessel may be heated. A water filled cap 22 with a spring return action is fitted in the top of the pressure vessel 20, and a safety valve 23 is provided in the cap 22. A steam outlet 24 is provided in the top of the pressure vessel, and the discharge of steam through a steam discharge pipe 25 is controlled by means of a control valve 26, which is operated by a lever 27. Handles 28 are provided on the side of the pressure vessel, and one of the handles 28 is located adjacent the lever 27, so that the same hand that uses the handle 28 may be used to operate the lever 27. The lower end of the discharge pipe 25 is provided with a removable nozzle 29, which is formed with a plurality of

radial apertures, to diffuse steam into a container of food or drink to be heated or cooked.

In use, the pressure vessel 20 is filled with a required amount of water through the filling cap 22. Preferably, means is provided on the vessel 20 for indicating the minimum and maximum desired water levels therein. The pressure vessel 20 is then placed on a cooker, and heated until the water boils. Thereupon, steam is discharged through the pipe 25, under the control of the valve 26, into a container of food or drink to be heated or cooked. Of course, the steam may be used for any other purpose, if desired.

The embodiments shown in Figure 3 operates on generally the same principle as that shown in Figure 2, but is of a somewhat different design. In Figure 3, the pressure vessel 30 is of generally conical shape, and is provided with a single handle 31, adjacent which there is disposed a control lever 32 for a valve 33, which controls the discharge of steam through a steam discharge pipe 34, the lower end of which is provided with radial perforations 35, to diffuse steam. A filler plug 36 is provided on the side of the vessel 30. A safety valve 37 is provided adjacent the top of the vessel 30. The pressure vessel 30 is provided with a heavy machined flat base 38. It will be appreciated that the design of the pressure vessel 30 provides particularly good stability and therefore safety. By way of example, it may be some twenty centimetres in diameter, and some twenty centimetres in height. The control lever 32 may be operated by either pushing it to one side or depressing it, against a spring bias.

In Figure 4, a pressure vessel 40 is of relatively small dimensions, being, for example, some ten centimetres in diameter and some fifteen centimetres in height. It is adapted to be secured to a wall by means of suitable brackets such as 41. Like the foregoing embodiments, it has a safety valve 42 adjacent the top of the vessel 40, and a control valve 43 with lever 44 adjacent the top of the vessel 40, for controlling discharge of steam through a discharge pipe 45.

However, the pressure vessel 40 of Figure 4 differs from the foregoing embodiments in having its own integral heating element 46, which is preferably an electric heating element connected to an electrical power outlet 47 by means of a cable 48. A supply of cold water is plumbed directly to the pressure vessel 40, and is supplied to maintain the level of water within the vessel 40 at a substantially constant level. For example, this may be done by means of a float valve 49 which controls the flow of water through an inlet pipe 50.

To use the pressure vessel 40, the power is switched on at the outlet 47, and the heating element 46 rapidly causes the water within the vessel to boil and produce steam. By way of example, the electric element 46 may be of 1.5 kw rating, and the flow valve 49 may be arranged to maintain a volume of water within the vessel 40 of approximately 0.5 litre. Thus, it will be appreciated that the pressure vessel 40 may have

relatively small dimensions, and may provide a particularly convenient means of providing steam. It may be positioned adjacent a sink.

CLAIMS

- 5 1. A pressure vessel from which steam can be generated, a steam outlet at an upper region of the vessel, a valve in communication with the steam outlet and a discharge pipe communicating with the valve and extending downwardly from the upper region of the vessel and capable of insertion into a container placed around the pipe such that steam from the pipe is discharged into contents within the container.
- 10 2. A pressure vessel according to claim 1, wherein the valve is capable of assuming a first position in which steam is retained within the pressure vessel and a second position in which steam is allowed to pass out of the pressure vessel through the said discharge pipe, the pressure vessel additionally including control means for bringing the valve into a selected one of said first and second positions.
- 15 3. A pressure vessel according to claim 2, wherein the control means is a lever or rotatable knob.
- 20 4. A pressure vessel according to claim 1, claim 2 or claim 3, which is a domestic pressure cooker.
- 25 5. A pressure vessel according to any one of the preceding claims which includes a heating element therein.
- 30 6. A pressure vessel according to claim 5, wherein the heating element is an electric element.
- 35 7. A pressure vessel according to claim 1, claim 2 or claim 3, which has a base adapted to receive heat from a cooker.
- 40 8. A pressure vessel according to any one of the preceding claims wherein the outlet is disposed in a lid of the pressure vessel.
- 45 9. A pressure vessel according to any one of the preceding claims wherein the outlet communicates essentially directly with the interior of the cooker.
- 50 10. A pressure vessel according to any one of the preceding claims wherein the pipe extends downwardly adjacent a side wall of the vessel and has a downwardly extending length of at least 10 cm.
- 55 11. A pressure vessel according to any one of the preceding claims which additionally includes at least one of a safety valve for the relief of excess pressure, a control for controlling the pressure within the pressure vessel and an indicator for indicating the pressure within the pressure vessel.
- 60 12. A pressure vessel according to any one of the preceding claims which additionally includes a wall mounting.
- 65 13. A method of modifying a pressure vessel which includes the steps of providing the pressure vessel with a steam outlet in an upper region thereof, a valve in communication with the outlet and a discharge pipe in communication with the valve.
14. A method according to claim 13, wherein the pressure vessel is a domestic pressure cooker.

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.